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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/629,415	08/01/2000	Mark C. Fowler	0100.0001150	6068

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Markison & Reckamp PC
P O Box 06229
Wacker Drive
Chicago, IL 60606-0229

EXAMINER

CHUNG, DANIEL J

ART UNIT	PAPER NUMBER
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2672

DATE MAILED: 09/10/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/629,415

Applicant(s)

FOWLER ET AL.

Examiner

Daniel J Chung

Art Unit

2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-5, 10-12 and 14-21 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 6-8 is/are allowed.
6) ☒ Claim(s) 2-5, 10-12 and 14-21 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Art Unit: 2672

DETAILED ACTION

Claims 2-8, 10-12 and 14-21 are presented for examination. This office action is in response to the interview summary, which mailed on 6-18-2004.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-5, 10-12 and 14-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furtner (6,778,177) in view of Long et al (6,483,519)

Regarding claim 20, Furtner discloses that the claimed feature of a method in a graphics system for traversing and rendering a graphic primitive (See Fig 2, Fig 4, Fig 6, Fig 9, Fig 26) comprising: determining representative values [i.e. "vertex/polygon data" in Fig 1] of a graphic primitive [i.e. "triangle in Fig 2]; determining, successively, from the representative values of the primitive data values for each pixel of a set of pixels [i.e. "pixel within triangle/cluster"] that are inside of the triangle (See col 3 line 39-50), and for each current pixel of the set of pixels inside of the triangle [i.e. "pixel within triangle/cluster"], looking ahead to a next adjacent pixel ["adjacent pixel"] to determined ["simultaneously

Art Unit: 2672

scanning adjacent pixel"] if the next adjacent pixel is inside of the triangle using edge functions ["edge function"] (See Fig 2,4,6,9,26, col 6 line 4-17, col 9 line 34-col 10 line 2, col 10 line 37-col 11 line 9, col 17 line 34+); storing [i.e. "RAM" in Fig 1] a characteristic value [i.e. "texture parameter in each pixel"] for the next adjacent pixel when the next adjacent pixel is inside the triangle; and scanning the current pixel while looking ahead to a next adjacent pixel to determined using edge functions if the next adjacent pixel is inside of the triangle. (See Fig 2,4,6,9,26, col 6 line 4-17, col 9 line 34-col 10 line 2, col 10 line 37-col 11 line 9, col 17 line 34+)

Furtner does not explicitly disclose that "scanning a pixel within the primitive **while** the look-ahead module processes the next pixel." However, such limitation is shown in the teaching of Long et al. ["The operation of the edge processing module 400 [look-ahead module in recited claims] **during** a scan line render operation [scan module in recited claims] ..."] (See col 11 line 50-53, Abstract, Fig 4) It would have been obvious to one skilled in the art to incorporate the teaching of Long et al into the teaching of Furtner, in order to provide "processing graphic objects for fast rasterised rendering" (See Title, Abstract line 20 in Long et al), as such improvement is also advantageously desirable in the teaching of Furtner for providing "accelerated method for rasterizing a graphic primitive in a graphics system in order to generate pixel data for the graphic primitive from graphic primitive description data." (See col 1 line 6-10 in Furtner)

Regarding claim 2, Furtner discloses that the scan module is structured to perform block mode scanning [i.e. "block scanning"]. (See Abstract, col 5 line 33-44, col 5 line 57-col 6 line 3)

Regarding claims 3 and 4, Furtner discloses that the graphic primitive is a triangle, and wherein the representative values are at least one edge function ["edge function"] of the triangle/a longest side of the triangle and slope values for at least one vertex of the triangle. (See Fig 26, Fig 27)

Regarding claim 5, Furtner discloses that the scan module is structured to check a next adjacent pixel while processing a current pixel to determined if the next adjacent pixel is inside the triangle. (See Fig 2,4,6,9,26, col 6 line 4-17, col 9 line 34-col 10 line 2, col 10 line 37-col 11 line 9, col 17 line 34+)

Regarding claims 10-12, Claims 10-12 are respectively equivalent to claims 2-4, and thus the rejections to claims 2-4 hereinabove are also respectively applicable to claims 10-12.

Regarding claim 14, Furtner discloses that a data value is assigned to a current pixel within the triangular primitive, and a data value is saved [i.e. "Ram"]

Art Unit: 2672

for a next pixel within the triangular primitive only when the next primitive is within the triangular primitive. (See Fig 1, Fig 2, Fig 4, Fig 6, Fig 9, Fig 26)

Regarding claim 15, Further discloses that data values are assigned only to pixels within the triangular primitive and never to pixels outside of the triangular primitive. (See Fig 2, Fig 4, Fig 6, Fig 9, Fig 26)

Regarding claim 16, Further discloses that the second module forms a plurality of data values for each pixel. (See Fig 1, Fig 2, Fig 4, Fig 6, Fig 9, Fig 26)

Regarding claims 17 and 21, claims 17 and 21 are similar in scope to the claims 20 and 4, and thus the rejections to claims 20 and 4 hereinabove are also applicable to claim 17 and 21.

Regarding claim 18, Further discloses that each edge function is associated with one particular edge of the graphic primitive and determines whether or not the next pixel in the horizontal direction is within the graphic primitive with respect to the one particular edge. (See Fig 3, Fig 4, Fig 24, Fig 26-27)

Art Unit: 2672

Regarding claim 19, Furtner discloses that each edge function returns a positive result if the next pixel is within the graphic primitive with respect to the one particular edge. (See Fig 3, Fig 4, Fig 24, Fig 26-27)

Allowable Subject Matter

Claims 6-8 are allowed

Response to Arguments

Applicant's arguments with respect to claim 2-5,10-12 and 14-21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Chung whose telephone number is (703) 306-3419. He can normally be reached Monday-Thursday and alternate Fridays from 7:30am- 5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael, Razavi, can be reached at (703) 305-4713.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Art Unit: 2672

Washington, D.C. 20231

or faxed to:

(703) 872-9306 (Central fax)

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121

Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

djc
August 28, 2004


JEFFERY BRIEN
PRIMARY EXAMINER